

... We were in HOLD and then transitioned to IDLE ... The rack actually was in HOLD from GMT [13-Oct-02] 286:10:33 to GMT [28-Oct-02] 301:14:38, then placed in ACTIVE until GMT [28-Oct-02] 301:18:55, then placed in HOLD again until GMT [29-Oct-02] 302:09:53 at which time we transitioned to IDLE.

Spectrograms for SAMS 121f03 sensor located on the Z-panel of the ARIS rack (ER2) for the transition times cited above are shown in Figure 2-23, Figure 2-24, and Figure 2-25; while Figure 2-26, Figure 2-27, and Figure 2-28 are spectrograms of the corresponding time frames for the SAMS 121f04 sensor attached to the Z-panel of the adjacent rack (ER1). The relatively strong broadband disturbance above 80 Hz and two strong narrowband signals at about 94.8 and about 178.3 Hz that accompany the HOLD mode draw particular attention. This can be seen most clearly when comparing the PSD traces shown in Figure 2-29. These PSD traces highlight key differences between the modes in a relative way, but to quantify the comparison in an absolute sense, one-third octave (OTO) quartile plots are more suitable. Table 2-10 lists references to the plots where the five markers in each OTO band are quartile statistics as follows:

1. top triangle: maximum value ("100th" percentile)
2. top of vertical line: 75th percentile
3. circle: 50th percentile (median)
4. bottom of vertical line: 25th percentile
5. bottom triangle: minimum value ("0th" percentile)

**Table 2-10 OTO Quartile Plots of ARIS Modes**

Sensor	ARIS Mode	See
121f03	HOLD	Figure 2-30
121f04	HOLD	Figure 2-31
121f03	ACTIVE	Figure 2-32
121f04	ACTIVE	Figure 2-33
121f03	HOLD	Figure 2-34
121f04	HOLD	Figure 2-35
121f03	IDLE	Figure 2-36
121f04	IDLE	Figure 2-37

As another means of quantifying the effects of the ARIS mode transitions cited earlier in this section, the peak acceleration, or maximum acceleration vector magnitude, was extracted from the measurements made by SAMS sensors 121f03 and 121f04 for each of 3 transitions. The results are shown in Table 2-11.

**Table 2-11 ARIS Transients During Mode Switches**

Sensor	Mode Transition	Peak Acceleration (mg)	See
121f03	HOLD to ACTIVE	37.7	Figure 2-38
121f04	HOLD to ACTIVE	25.5	Figure 2-39
121f03	ACTIVE to HOLD	48.5	Figure 2-40
121f04	ACTIVE to HOLD	30.1	Figure 2-41
121f03	HOLD to IDLE	40.8	Figure 2-42
121f04	HOLD to IDLE	17.1	Figure 2-43